BAIN MUSC 525
Post-Tonal Music Theory

Straus Theory Exercises
Ch. 1: VIII (p. 19)

ANSWERS

We will revisit VIII 1 & 2 once we have read Chapter 2. (IMHO, they are much are easier to approach once you understand what a *set class* is.) Keep in mind that larger sets form more intervals, so (as a general rule) its usually best to do the small sets first. For example, try VIII 1c, and VIII 1d, first. Nonetheless, an intuitive, brute-force approach may be used here as shown below for exercises VIII 1c and VIII 2a:

VIII. 1. c. 2,3,7 or D,E♭, G

D–E♭ belongs to ic1
D–G belongs to ic5
E♭ –G belongs ic4
So the ic vector is: 100110

VIII. 2. a. 111000

Using a trial an error approach, try to make a collection with the requested number of occurrences of each interval class. For example, in VIII 2a, you need one ic1, one ic2, and one ic3. To keep things simple, I always work on pitch class C. It doesn't matter if you build it above C or below C. After a little bit of goofing around with various pitch classes you will, hopefully, come up w/ something like:

C, C#, Eb or C,B,A
etc.

VIII 1. If you have read Ch. 2: You can find the IC vector by calculating the *prime form* of the given pc set and then using it to look up the IC vector in *Appendix 1* (p. 261).

	Collection name	PC set	Set class	IC vector
a.	Octatonic scale	(0,1,3,4,6,7,9,10)	8-28 (0134679T)	**448444**
b.	Whole-tone scale	(0,2,4,6,8,10)	6-35 (02468T)	**060603**
c.		(2,3,7)	3-4 (015)	**100110**
d.	Augmented triad	(0,4,8)	3-12 (048)	**000300**
e.	Major pentatonic scale	(0,2,4,5,7,9)	5-35 (02479)	**032140**
f.		(1,5,8,9)	4-19 (0148)	**101310**

VIII 2. If you have read Ch. 2: Count the total number of ic occurrences in the vector. For example, for 111000: 1+1+1=3. Use the total number of ic occurrences to determine the cardinality of the set. For example, 3 implies a trichord, 6 implies a tetrachord, 10 implies a pentachord, 15 implies a hexachord, etc. Search *Appendix 1* for the given IC vector. In some cases, there may be more than one collection with the same ic vector (more on this later). Build a collection using the prime form as a model, e.g., (013) implies 0, 1, 3, or C, C♯, D♯.

	IC vector	No. of intervals formed	Cardinality of set	Set class	Collection
a.	111000	1+1+1=3	3	3-2 (013)	0, 1, 3
b.	004002	4+2=6	4	4-28 (0369)	0, 3, 6, 9
c.	111111	1+1+1+1+1+1=6	4	4-Z15 (0146) or 4-29 (0137)	0, 1, 4, 6 or 0, 1, 3, 7
d.	303630	3+3+6+3=15	6	6-20 (014589)	0, 1, 4, 5, 8, 9